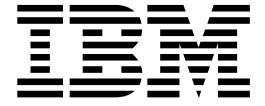


7206 Model 220 External 4mm Tape Drive



7206 Model 220 4mm Tape Drive Service Guide

7206 Model 220 External 4mm Tape Drive



7206 Model 220 4mm Tape Drive Service Guide

Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page v.

First Edition (February, 2000)

This edition, SY32-0409-01, applies to Model 220 of the 7206 4mm Tape Drive and to all subsequent releases and modifications until otherwise indicated in new editions. This edition applies only to the specified model of the device.

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A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people.

Use the following danger notices throughout this book.

DANGER

To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. (RSFTD004)

DANGER

Dangerous voltage being measured. (RSFTD005)

DANGER

Up to 240 V ac is present at the power module connectors when the main power cord is connected to a power source. (RSFTD010)

DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)

DANGER

To prevent a possible electrical shock when adding or removing any devices to or from the system, ensure that the power cords for those devices are unplugged before the signal cables are connected or disconnected. If possible, disconnect all power cords from the existing system before you add or remove a device. (RSFTD203)

DANGER

To prevent a possible electrical shock when installing the device, ensure that the power cord for that device is unplugged before installing signal cables. (RSFTD204)

DANGER

Do not attempt to open the covers of the power supply. Power supplies are not serviceable and are to be replaced as a unit. (RSFTD217)

Caution Notices

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The system unit contains batteries and circuit boards with lead solder. Before you dispose of this unit, these batteries and circuit boards must be removed and discarded according to local regulations or recycled where facilities exist. This book contains specific information on each battery type where applicable.

Battery Return Program

In the United States, IBM has established a collection process for reuse, recycling, or proper disposal of used IBM batteries and battery packs. For information on proper disposal of the batteries in this unit, please contact IBM at 1-800-426-4333. Please have the IBM part number that is listed on the battery available when you make your call. For information on battery disposal outside the United States, contact your local waste disposal facility.

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Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504

Telephone: 1-919-543-2193

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About This Guide

Attention: Before attempting to work with the 7206 Tape Drive or using any of the information in this guide, perform the safety inspection procedures described in “Appendix C. Safety Inspection Procedures” on page 47.

Chapter 1, “Reference Information,” describes the operator controls, indicator lights, connector locations, and hardware specifications of the 7206 Tape Drive. It also tells how to clean the tape drive.

Chapter 2, “Using the Media,” describes the media to use in the 7206 Tape Drive.

Chapter 3, “Maintenance Analysis Procedures,” provides the maintenance analysis procedures (MAPs) required to service the 7206 Tape Drive.

Chapter 4, “Removal and Replacement Procedures,” provides the removal and replacement procedures required to service the 7206 Tape Drive.

Chapter 5, “Parts Diagram and Parts List,” provides a parts diagram and parts list required to service the 7206 Tape Drive.

Appendix A, “Power Cables,” provides power cable information for different countries.

Appendix B, “Safety Inspection Procedures,” provides steps to identify unsafe conditions before working with the 7206 Tape Drive.

Store this guide with your system manuals.

Related Publications

- *7206 Model 220 4mm Tape Drive Setup and Operator Guide*, SA26-2006, provides information about installing and operating the 7206 Model 220 Tape Drive.
- *IBM Externally Attached Devices Safety Information* manual, SA26-2004, provides translations of danger notices.

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Chapter 1. Reference Information

Attention: Before attempting to work with the 7206 Tape Drive or using any of the information in this guide, perform the safety inspection procedures described in “Appendix C. Safety Inspection Procedures” on page 47.

The 7206 Model 220 4mm Tape Drive is an external storage device that connects to the IBM RS/6000[®] and stores additional data. The unit is a streaming tape drive that uses Digital Data Storage (DDS) tape media.

The 7206 Tape Drive attaches to selected RS/6000 systems that use a low voltage differential/single ended (LVD/SE) or SE Wide SCSI-2 interface which meets the Small Computer System Interface-2 (SCSI-2) standard X3.131-1994 Rev. 10L of the American National Standards Institute (ANSI).

The 7206 Tape Drive:

- Saves and restores system data files
- Archives important records
- Installs operating system software upgrades

The sections that follow describe the operator controls and indicator lights on the 7206 Tape Drive. This chapter also shows the connector locations, lists hardware specifications, and describes how to clean the tape drive.

Front View

Figure 1 shows the front view of the 7206 Tape Drive.

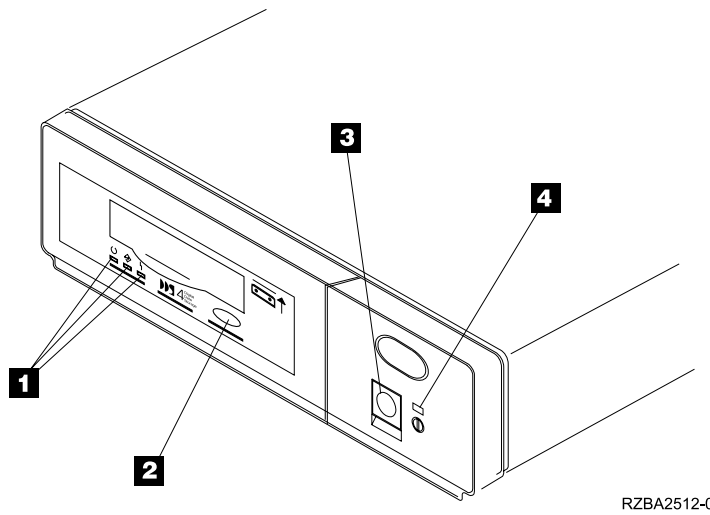


Figure 1. Front View of the 7206 Model 220 4mm Tape Drive

- | | | | |
|----------|---------------|----------|----------------|
| 1 | Status lights | 3 | Power switch |
| 2 | Unload button | 4 | Power on light |

Operator Controls

The 7206 Model 220 4mm Tape Drive has the following operator controls.

Power Switch

The power switch (**3** in Figure 1) is a push button switch that enables the power to be turned on or off. Push and release the button to turn the power on, when it is off, or off when it is on. When the 7206 Tape Drive is on, the power-on light **4** is on.

Note: The $\text{\textcircled{1}}$ symbol located beside the power switch is an International Organization for Standardization (ISO) symbol for a push button switch.

Unload Button

The unload button **2** enables the tape cartridge to be ejected. The unload button operates only when the 7206 Tape Drive power is on. To remove a cartridge, press and hold the unload button for about one second.

Emergency Eject Feature

Attention: This procedure may result in loss of data.

The 7206 Tape Drive includes an emergency eject and reset feature that releases the tape cartridge and resets the drive. Use the feature if the cartridge does not move properly or if the unload process fails.

To perform an emergency eject of the tape cartridge or a reset of the drive, press and hold the unload button for at least 5 seconds. If a cartridge is in the drive, it automatically ejects without rewinding.

Indicator Lights

The 7206 Tape Drive has the following indicator lights.

Power-On Light

When the 7206 Tape Drive is turned on, the power-on light (**4** in Figure 1 on page 2) comes on and stays on.

Status Lights

Three status lights (**1** in Figure 1 on page 2) and their ISO symbols appear on the 7206 Tape Drive as follows:

- **Ready** (green)
- ◇ **Activity** (green)
- ⊣ **Fault** (amber)

The combinations of the lights and their definitions are shown in Table 1 on page 4.

Table 1. Definition of Status Light Combinations

Ready ○	Fault ⌋	Activity ⊠	Definition
Flashing	Off	Off	The Power-On Self Test (POST) is running or the test cartridge is running.
Off or On	On	Off or Flashing	The tape drive requires cleaning. See "Cleaning the Tape Drive" on page 10. <ul style="list-style-type: none"> • If the Ready light is on, a tape cartridge is in the drive. If the light is off, a cartridge is not in the drive. • If the Activity light flashes, a tape cartridge is in the drive and tape movement is occurring. If the light is off, no tape movement is occurring.
Off	Off or On	Off	One of the conditions exists: <ul style="list-style-type: none"> • The power is off (Fault light is off). • The POST completed successfully, but no tape cartridge has been inserted. • If the Fault light is on, cleaning is required. See "Cleaning the Tape Drive" on page 10.
On	Off or On	Off or Flashing	A data cartridge has been inserted. <ul style="list-style-type: none"> • The 7206 Tape Drive is ready to receive commands from the system (whether the Fault light is on or off). • If the Fault light is on, cleaning is required. See "Cleaning the Tape Drive" on page 10. • If the Activity light flashes, a tape cartridge is in the drive and tape movement is occurring. If the light is off, no tape movement is occurring.
On	Off or On	Flashing	The tape is in motion, and the 7206 Tape Drive is running an operation or is cleaning.
Off	Flashing	Off	The 7206 Tape Drive detected an internal fault that requires corrective action. <ul style="list-style-type: none"> • Reset the error by turning the power off to the 7206 Tape Drive, then turning it back on, or by holding down the open/close button for 8 seconds. • If the Fault light still flashes after the reset, contact your service representative.

Notes:

1. The 7206 Tape Drive needs cleaning when the tape drive turns on the Fault status light (solid amber). The light turns on when:
 - The 7206 Tape Drive determines that its soft error rate (recovered errors) exceeds a preset soft-error rate limit, or
 - The 7206 Tape Drive has been used for 50 tape motion hours without cleaning. Tape motion hours are defined as the time the tape drive is moving tape.

When the Fault light turns on (solid amber), the 7206 Tape Drive causes AIX to log an information error (TAPE_ERR6) in the AIX log, indicating that the tape drive needs to be cleaned.

2. IBM only supports the use of IBM media.
3. The 7206 Tape Drive is designed to operate in normal office environments. Dirty environments or other poor environments may damage the tape drive. It is the responsibility of the customer to provide the proper operating environment.
4. When the tape drive indicates that the drive needs to be cleaned, it is the responsibility of the customer to clean the tape drive with the recommended cleaning cartridge.
5. If a DDS2 diagnostic cartridge (P/N 8191146) is used in the 7206 Tape Drive, that cartridge will do automatic diagnostics.
6. If a DDS1 diagnostic cartridge (P/N 21F8762) is used, that cartridge will be immediately ejected as an incorrect cartridge type.

Rear View

Figure 2 shows the elements on the rear of the 7206 Model 220 Tape Drive.

- | | | | |
|----------|---------------------------|----------|-----------------------|
| 1 | SCSI address switch | 3 | Cooling fan |
| 2 | SCSI bus cable connectors | 4 | Power cable connector |

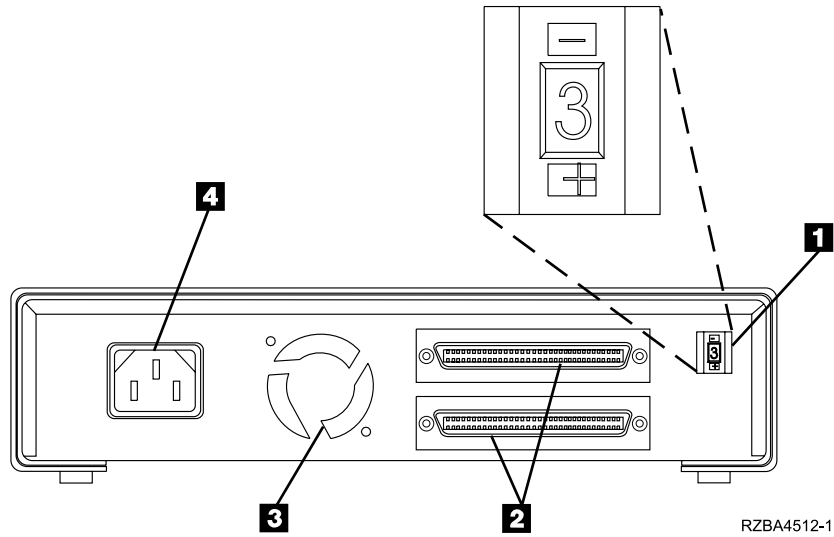


Figure 2. Rear View of the 7206 Model 220 Tape Drive

Internal View

Figure 3 shows the inside of the 7206 Model 220 Tape Drive.

- | | | | |
|----------|---------------------|----------|--------------|
| 1 | Drive | 4 | Cooling fan |
| 2 | SCSI address switch | 5 | Power supply |
| 3 | SCSI bus cable | | |

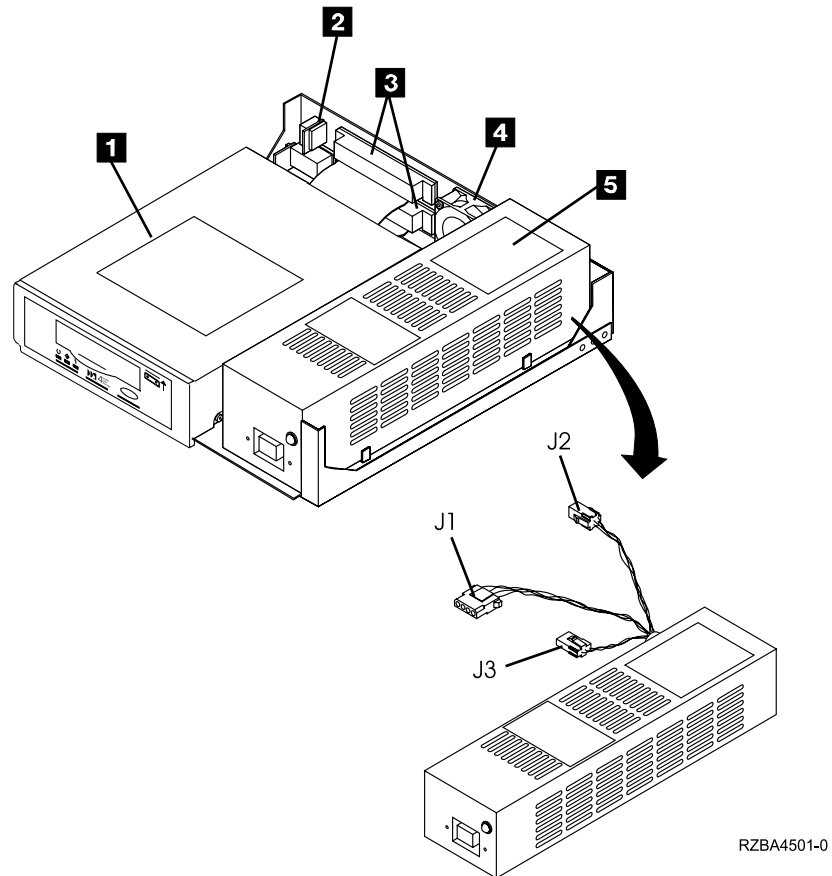


Figure 3. Internal View of the 7206 Model 220 Tape Drive

Rear View of the Drive

Figure 4 shows the connector locations on the drive.

- | | | | |
|----------|------------------------|----------|------------------------|
| 1 | SCSI address connector | 3 | Power supply connector |
| 2 | SCSI bus connector | | |

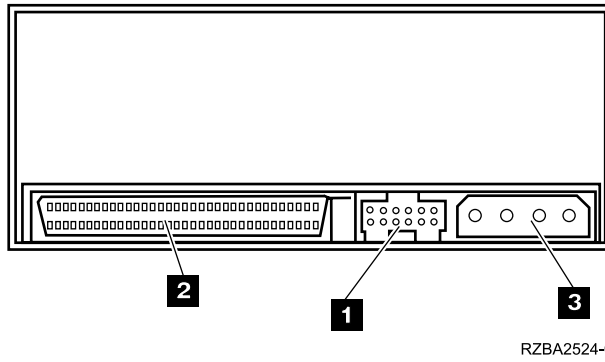


Figure 4. Connector Locations on the Drive

System Requirement

The 7206 Tape Drive attaches to selected RS/6000 systems that uses a Wide Fast-20 LVD SCSI or single-ended FW SCSI adapter interface which meets the Small Computer System Interface-2 (SCSI-2) standard X3.131-1994 Rev 10L of the American National Standards Institute (ANSI).

The 7206 Tape Drive must be attached to a supported RS/6000 processor and adapter with an AIX operating system at level:

- 4.1.5 (when installed with authorized program analysis report (APAR) #IX69941)
- 4.2 (when installed with APAR #IX69950) or higher
- 4.3 or higher

Specifications

Table 2. Specifications for the 7206 Model 220 4mm Tape Drive

Physical Specifications		
Width	250 mm (9.8 in.)	
Depth	275 mm (10.8 in.)	
Height	55 mm (2.2 in.)	
Weight	3.7 kg (8 lb)	
Power Specifications		
kVA (typical)	.03 @120 V ac	
V ac Input	100 to 125 200 to 240	
V dc Output	+5 and +12	
Frequency	50 to 60 Hz	
Heat Output	77 Btu/hr (23 watts) @ 240 V ac	
Power Factor	.4 to .6	
Other Specifications		
Altitude	2135 m (7000 ft)	
Recommended Environment		
Environmental Factor	Operating	Non-operating
Temperature	16 to 32°C (60 to 90°F)	10 to 43°C (50 to 110°F)
Relative Humidity (noncondensing)	20 to 80%	20 to 90%
Maximum Wet Bulb	23°C (73°F)	27°C (80°F)

Cleaning the Tape Drive

Clean the 7206 Tape Drive whenever the Fault status light comes on or a system I/O error related to that device occurs.

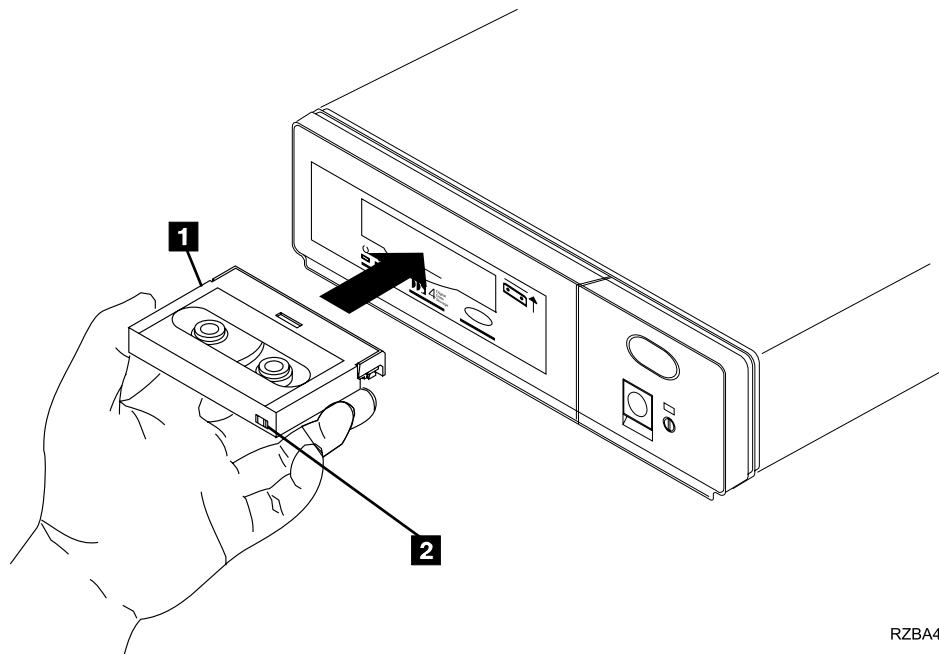
Attention: Use only the recommended cleaning cartridge to clean the tape drive. Use of other than recommended cleaning cartridges can damage your drive and may void the warranty.

To clean the 7206 Tape Drive tape drive:

1. Make sure that the power is on to the 7206 Tape Drive. (The power-on light should be on.)
2. If a tape cartridge is in the 7206 Tape Drive, eject and remove the cartridge.

Note: The IBM cleaning cartridge has 50 white dots on the window side that are designed to be used to log the use of the cartridge. Each time the cartridge is used, mark one of the dots on the cartridge with a pen or marker. When all of the dots have been marked, discard the cleaning cartridge.

3. Grasp the cleaning cartridge (**1** in Figure 5) by the outer edges, with the window side up and the write-protect switch **2** facing you.
4. Lift the door on the front of the 7206 Tape Drive and slide the cartridge into the opening on the front of the 7206 Tape Drive until the loading mechanism pulls the cartridge into the drive and the drive door closes.



RZBA4502-0

Figure 5. Loading the Cleaning Cartridge

After the cleaning cartridge has been inserted, the remainder of the cleaning process is automatic. The 7206 Tape Drive:

1. Loads the cleaning cartridge into the tape drive
2. Cleans the drive by moving the cleaning tape forward for approximately 30 seconds
3. Unloads the cleaning cartridge when the cleaning operation is complete
4. Indicates a successful cleaning operation by turning off the Fault status light (if the Fault light was on prior to the cleaning process; otherwise, the Fault light remains solid to indicate that the cleaning cartridge is no longer usable)

If a system error occurs, clean the drive and retry the operation. If the operation fails, replace the data cartridge, clean the drive again, then retry the operation.

To determine how many times a cleaning cartridge may be used, check the information printed on the cartridge. If you attempt to use a depleted cleaning cartridge, the 7206 Tape Drive automatically detects the error and ejects the cartridge. If the Fault status light was on prior to the cleaning process, it stays on; if the Fault light was off, the depleted cartridge causes the light to come on.

Chapter 2. Using the Media

The 7206 Tape Drive uses 4mm data cartridges for saving and restoring system data. It is designed to use only DDS (Digital Data Storage) data cartridges. The cartridges are identified by one of the following DDS symbols:



RZBA4500-1

The 7206 Tape Drive only reads and writes data to tape cartridges that are DDS-2, 3, or 4 format.

Note: The 7206 Model 220 Tape Drive only supports DDS-2, 3, and 4 tape cartridges.

The 7206 Tape Drive has been designed to operate with DDS media that meet the following standards of the European Computer Manufacturers Association (ECMA):

- ECMA-198 DDS-2 format
- ECMA-236 DDS-3 format
- ECMA-288 DDS-4 format

Note: IBM only supports the use of IBM media.

Types of Tape Cartridges

The 7206 Tape Drive is shipped with the following media cartridges.

Data Cartridge	Use the 4mm data cartridge to save or restore programs or data.
Test Cartridge	Use the specially labeled 4mm test cartridge to run the AIX [®] system diagnostics (for information about running diagnostics, refer to your AIX manuals). The test cartridge should not be used to save or restore customer programs or data.
Cleaning Cartridge	Attention: Use of other than the IBM 4mm cleaning cartridge can damage your 7206 Tape Drive and may void your warranty. Use the specially labeled cleaning cartridge (part number 21F8763) to clean the 7206 Tape Drive. For instructions about how to clean the 7206 Tape Drive, see “Cleaning the Tape Drive” on page 10).

To order additional cartridges, refer to “Appendix B. Ordering Tape Cartridges” on page 45.

Recommendations for Data Cartridge Usage

The following list describes recommended guidelines that will help to protect your data and prolong the life of your tape cartridges and the 7206 Tape Drive:

- Use only IBM 4mm DDS cartridges.
- Remove the tape cartridge from the drive when the drive is not in use.
- Back up and then discard any tape cartridge that repeatedly produces error messages (the error information is in the System Error Log).
- On the data cartridge, do not open the door that covers the tape. The door protects the tape from dirt, dust, and damage.
- Do not touch the tape. Any substance transferred to the tape by touching could cause loss of data.
- Use only one label on a tape cartridge. Multiple or poorly placed labels can clog the drive load mechanism.
- Do not use poor-quality tape cartridges. They can cause excessive read or write errors, and may damage the tape drive.
- Discard any tape cartridges that are dropped, as the impact may damage the tape's internal mechanism.
- Make sure the environment is kept clean and constant. Do not operate in a dusty environment and always maintain a constant environmental atmosphere. A consistent storage and operating environment reduces media exposure to climatic stress.

Attention: Use only the recommended cleaning cartridge to clean the tape drive. Use of other than recommended cleaning cartridges can damage your drive and may void the warranty.

- Printers and copiers can produce paper and toner dust. Locate the tape unit away from these items. High traffic areas near hallways and doors can also produce excess dust and dirt.
- All important information should be recorded on the tape label. Information, such as the model and number of the system or tape drive, the date, the density, any error statistics, and a log number should be included. The operating environment and compression mode should also be noted.

Data Cartridge Erasure

Most bulk eraser devices do not have the capability to erase the 4mm data cartridge. To properly erase a 4mm data cartridge with a bulk eraser device, the erasure coercivity rating must be a minimum of 3900 Oersted.

Storage and Shipping Environments

Before using a tape cartridge, let it acclimate to the operating environment by placing the cartridge in the operating environment for as long as it has been away from the environment or for 24 hours, whichever is less. (To determine the appropriate operating environment, see "Specifications" on page 9.)

Acclimation is necessary for any data cartridge exposed to a different humidity environment or to temperature changes of 11°C (20°F) or more.

Retrieval of archived data should be performed on a tape unit that is clean and fully operational. Try to make the recovery environment the same as the operating environment. Allow tapes at least 24 hours to acclimate to environment of the tape unit.

The recommended environment for storage and shipment of 4mm data cartridges is shown in Table 3.

Table 3. Recommended Environment for 4mm Data Cartridges

Environmental Factor	Storage	Shipping
Temperature	5°C to 32°C (41° to 90°F)	-40 to 52°C (-40 to 125°F)
Relative Humidity (noncondensing)	20 to 60%	5 to 80%
Maximum Wet Bulb	26°C (79°F)	26°C (79°F)

Tape Cartridge Storage

Tape drives record data using densities similar to hard disk drives. Because most computer systems are not located in a dust-free, climate-controlled environment, you must exercise special care when dealing with tape cartridges and tape drives. They need to be treated as a valuable asset used to protect your business data.

Use the following guidelines for storing your tape cartridges:

- Temperature and humidity should be kept constant at a level comfortable for you.
- Tape cartridges should always be stored in their protective cases. The storage case helps prevent damage from dust and physical misuse. When the tape cartridges are not in use or being stored, they should be in their storage cases and stood on edge in a designated storage location. Do not stack cartridges on the flat side or stack other items on top of the tape cartridges. Handle your tape cartridges with care to reduce archival problems.
- Stored tapes should be exercised at least once every 12 months. Run the tape from Beginning of Data (BOD) to End of Data (EOD) and back to BOD at normal operating speeds. Tapes stored in a warmer environment should be exercised more frequently.
- Sunlight can damage the tape and the cartridge shell. Store tape cartridges out of the direct sunlight

Attention: Operation outside of the environment can result in possible loss of data or failure of the autoloader.

Operating in Harsh Environments

Do not use as an archival tape any tape that has been used outside of the operating ranges specified in Table 2 on page 9 for an extended period of time. The magnetic and physical strength of the tape will have deteriorated as a result of its exposure to the environment. Do not store important data on such a tape; transfer the data to a newer tape for reliable archiving.

Attention: Do not operate the 7206 Tape Drive in a poor air-quality environment. If your environment contains an excessive amount of particulates, contact your service representative for more information.

Setting the Write-Protect Switch

The position of the write-protect switch on the 4mm tape cartridge determines when you can write to the tape (see Figure 6).

- When the switch is set to the right **1**, data can be written to and read from the tape.
- When the switch is set to the left **2**, data can only be read.

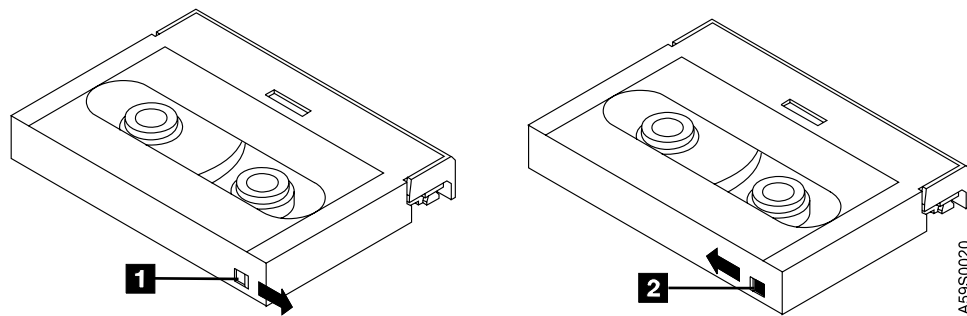


Figure 6. Setting the Write-Protect Switch

Chapter 3. Maintenance Analysis Procedures

Purpose of the MAPs

Maintenance analysis procedures (MAPs) are used to check the:

Power cable	SCSI address	Drive
Power supply	SCSI bus (signal) cable	Fan
Terminator	Configuration	Drive head

If a problem is detected, the procedure isolates the problem to the failing field replaceable unit (FRU), such as the 7206 Tape Drive drive, power supply, or cooling fan. For instructions about removing or replacing a FRU, refer to “Chapter 4. Removal and Replacement Procedures” on page 27.

Figure 7 on page 18 provides a flowchart to be used as a guide to the MAPs. For detailed instructions on how to perform each procedure safely and correctly, refer to the steps in this chapter.

Flowchart of the MAPs

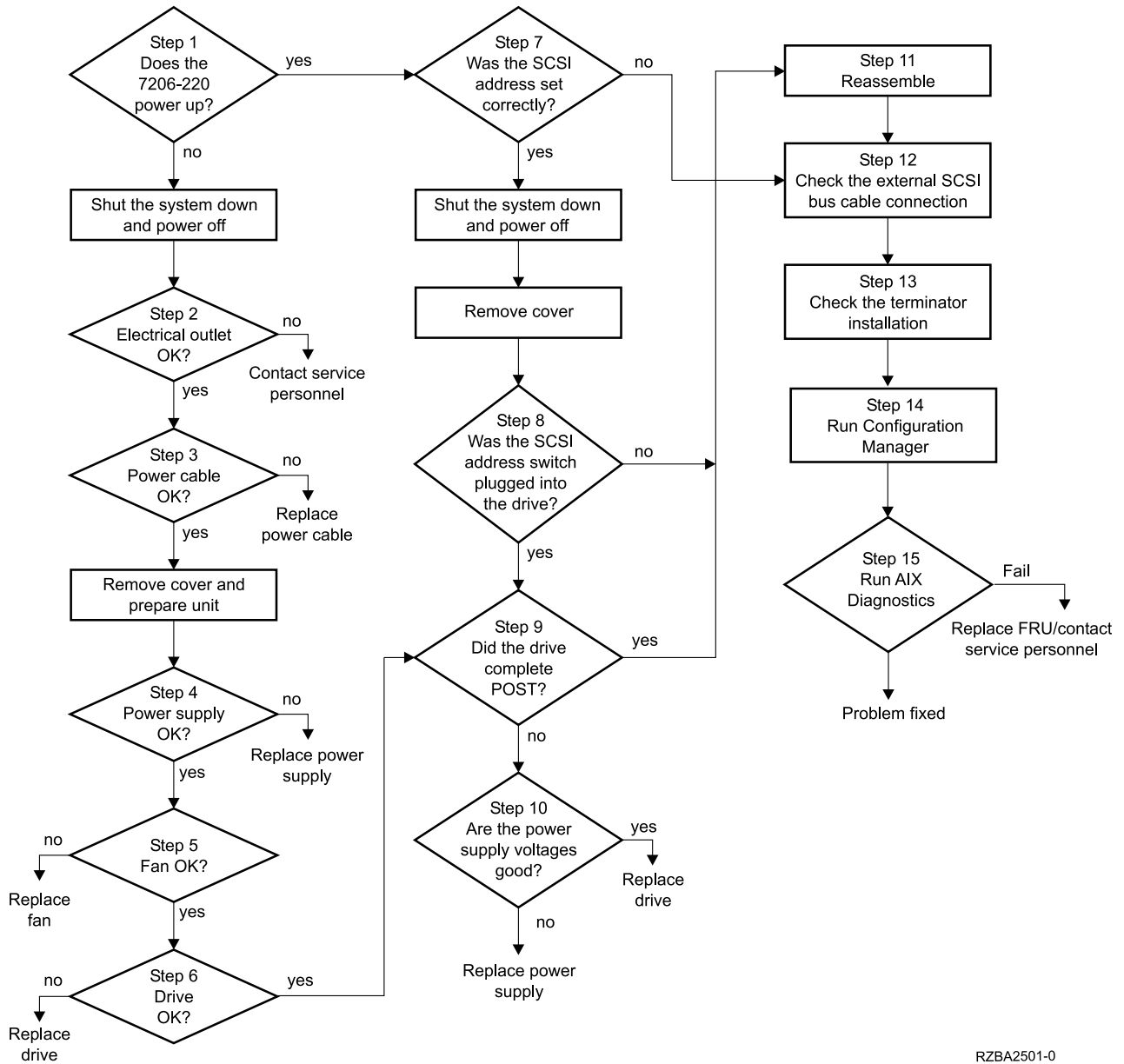


Figure 7. Flowchart of Maintenance Analysis Procedures (MAPs)

RZBA2501-0

Step 1: Power and Fan

This step verifies whether the power and the fan operate properly.

DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)

1. Make sure that the 7206 Tape Drive power cable is plugged into an electrical outlet.
2. Make sure that the 7206 Tape Drive power is on by checking that:
 - The power-on light is on.
 - There is airflow from the fan at the rear of the unit.

Is the power-on light on and is there airflow from the fan?

NO While watching for the power-on light to come on, press the power switch again. Repeat this procedure several times. If the power-on light fails to come on or there is no airflow from the fan, go to Step 2: Electrical Outlet Voltage.

YES Go to Step 7: SCSI Address Switch.

Step 2: Electrical Outlet Voltage

This step tests the voltage at the electrical outlet.

1. Do a controlled system shutdown (refer to the instructions in Chapter 2, "Setting Up the 7206 Tape Drive," in the *7206 Model 220 4mm Tape Drive Setup and Operator Guide*).
2. Ensure that the power to the system unit is off.
3. Press the 7206 Tape Drive power switch to turn off the power.
4. Unplug the 7206 Tape Drive power cable from the electrical outlet and from the 7206 Tape Drive.

DANGER

Dangerous voltage being measured. (RSFTD005)

5. Check the electrical outlets for proper voltage.

Is the voltage from the electrical outlet correct?

NO Contact your service personnel for further instructions.

YES Go to Step 3: Power Cable.

Step 3: Power Cable

This step determines whether the power cable is functional.

Make sure that all of the conductors in the power cable have continuity, and that there are no short circuits.

Does the power cable have continuity and are there no short circuits?

NO Replace the power cable.

YES Go to Step 4: Power Supply, Fan, and Tape Drive.

Step 4: Power Supply, Fan, and Tape Drive

This step prepares the 7206 Tape Drive to determine whether the power supply, fan, or tape drive is the cause of the problem.

1. Perform the cover removal procedure. Refer to “Removing and Replacing the Cover” on page 28.
2. Plug the 7206 Tape Drive power cable into the 7206 Tape Drive and into the electrical outlet.
3. Press the power switch to turn off the power.

DANGER

Up to 240 V ac is present at the power module connectors when the main power cord is connected to a power source. (RSFTD010)

4. Disconnect the power supply connector (J1) from the drive (refer to Figure 3 on page 7).
5. Disconnect the power supply connector (J2) between the power supply and the cooling fan.
6. Press the power switch to turn on the power.

Does the power-on light come on and stay on?

NO Replace the power supply. Refer to “Removing and Replacing the Power Supply” on page 32.

DANGER

Do not attempt to open the covers of the power supply. Power supplies are not serviceable and are to be replaced as a unit. (RSFTD217)

YES Go to Step 5: Cooling Fan.

Step 5: Cooling Fan

This step examines the cooling fan as the possible source of the problem.

1. Press the power switch to turn off the power.

DANGER

Up to 240 V ac is present at the power module connectors when the main power cord is connected to a power source. (RSFTD010)

2. Reconnect the power supply connector (J2) to the cooling fan (refer to Figure 3 on page 7).
3. Press the power switch to turn on the power.

Does the power-on light come on and stay on, and is there airflow from the fan?

NO Power off the 7206 Tape Drive and then replace the cooling fan. Verify that the power-on light comes on when power is restored to the device. Refer to “Removing and Replacing the Cooling Fan” on page 34.

YES Go to Step 6: Tape Drive.

Step 6: Tape Drive

This step examines the drive as the possible source of the problem.

1. Press the power switch to turn off the power.

DANGER

Up to 240 V ac is present at the power module connectors when the main power cord is connected to a power source. (RSFTD010)

2. Reconnect the power supply connector (J1) to the drive (refer to Figure 3 on page 7).
3. Press the power switch to turn on the power.

Does the power-on light come on and stay on, and is there airflow from the fan?

NO Power off the 7206 Tape Drive and then replace the drive. Refer to “Removing and Replacing the Drive” on page 30.

Note: If the media is still in the drive being replaced, it can be removed manually. See “Manually Removing a Tape Cartridge” on page 35.

YES Go to Step 9: Tape Drive Status Lights.

Step 7: SCSI Address Switch

This step checks that the SCSI address switch setting is correct.

Is the SCSI address set correctly?

NO Set the SCSI address switch to the proper address, then go to Step 12: External SCSI Cable Connection. To set the SCSI address switch, refer to the instructions in Chapter 2, "Setting Up the 7206 Tape Drive," in the *7206 Model 220 4mm Tape Drive Setup and Operator Guide*.

Note: You should turn the power to the 7206 Tape Drive off and then back on again to ensure the SCSI address setting is recognized.

YES Go to Step 8: SCSI Address Cable.

Step 8: SCSI Address Cable

This step checks whether the SCSI address switch is plugged into the drive.

1. Do a controlled system shutdown (refer to the instructions in Chapter 2, "Setting Up the 7206 Tape Drive," in the *7206 Model 220 4mm Tape Drive Setup and Operator Guide*).
2. Perform the cover removal procedure. Refer to "Removing and Replacing the Cover" on page 28.

DANGER

To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. (RSFTD004)

Is the SCSI address switch plugged securely into the drive?

NO Ensure that the SCSI address switch is plugged securely into the drive, then go to Step 11: Reassembly.

YES Go to Step 9: Tape Drive Status Lights.

Step 9: Tape Drive Status Lights

This step examines the drive as the possible source of the problem.

While pressing the power switch to turn on the power, watch to see if the three status lights come on for approximately 10 seconds, then go out.

Did the three status lights come on for approximately 10 seconds, then go out?

NO Go to Step 10: Power Supply Voltage Level.

YES Go to Step 11: Reassembly.

Step 10: Power Supply Voltage Level

This step checks the power supply voltage levels as the possible source of the problem.

1. Press the power switch to turn off the power.
2. Perform the cover removal procedure. Refer to “Removing and Replacing the Cover” on page 28.
3. Disconnect the power supply connector (J1) from the drive.
4. Disconnect the power supply connector (J2) between the power supply and the cooling fan.
5. Connect the power cable to both the 7206 Tape Drive and the electrical outlet.
6. Press the power switch to turn on the power.

DANGER

Dangerous voltage being measured. (RSFTD005)

7. On the power supply connector J1 (see Figure 8), check the following:
 - The +12V signal falls between a minimum of +11.5 volts and a maximum of +12.6 volts
 - The +5V signal falls between a minimum of +4.8 volts and a maximum of +5.25 volts

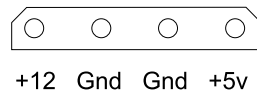


Figure 8. Power Supply Connector J1

8. On the power supply connector J2 (see Figure 9), check that the +12V signal falls between a minimum of +11.5 volts and a maximum of +12.6 volts.

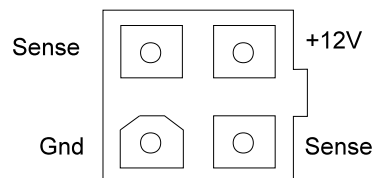


Figure 9. Power Supply Connector J2

Are the voltages good?

NO Replace the power supply. Refer to “Removing and Replacing the Power Supply” on page 32.

YES Replace the drive. See “Removing and Replacing the Drive” on page 30.

Note: If the media is still in the drive being replaced, it can be removed manually. See “Manually Removing a Tape Cartridge” on page 35.

Step 11: Reassembly

This step describes the reassembly process.

1. Press the power switch to turn off the power.
2. Unplug the power cable from the electrical outlet.
3. Make sure that the power supply connector (J1) is plugged into the drive.
4. Make sure that the power supply connector (J2) is plugged into the cooling fan.
5. Make sure that all other cables are properly connected, and that the wires are routed away from the cooling fan.
6. Perform the cover replacement procedure. Refer to “Removing and Replacing the Cover” on page 28.
7. Plug the power cable into the electrical outlet.
8. Press the power switch to turn on the power.

Does the power-on light come and stay on, and is there airflow from the fan?

NO Verify that the 7206 Tape Drive was reassembled correctly. If the power-on light still does not come on and there is no airflow from the fan, go to Step 1: Power and Fan.

YES Go to Step 12: External SCSI Cable Connection.

Step 12: External SCSI Cable Connection

This step ensures that the external SCSI bus cable connection is proper.

DANGER

<p>To prevent a possible electrical shock when installing the device, ensure that the power cord for that device is unplugged before installing signal cables. (RSFTD204)</p>
--

Ensure that the SCSI bus cable is properly connected to both the system unit and to the 7206 Tape Drive.

Is the SCSI bus cable properly connected to the system unit and to the 7206 Tape Drive?

NO Plug the SCSI bus cable into the system unit and into the 7206 Tape Drive, then go to Step 13: Terminator Connection.

YES Go to Step 13: Terminator Connection.

Step 13: Terminator Connection

This step ensures that the terminator connection is proper.

DANGER

To prevent a possible electrical shock when installing the device, ensure that the power cord for that device is unplugged before installing signal cables. (RSFTD204)

Ensure that the terminator is properly connected to the last device on the SCSI bus.

Is the terminator properly connected to the last device on the SCSI bus?

- NO** Ensure that the terminator is properly connected to the last device on the SCSI bus, then go to Step 14: Configuration.
- YES** Go to Step 14: Configuration.

Step 14: Configuration

This step verifies that the 7206 Tape Drive has been properly configured to the RS/6000.

1. Clean the drive. See “Cleaning the Tape Drive” on page 10.
2. At the system prompt, type `cfgmgr` to configure the 7206 Tape Drive and make it Available.

To ensure that 7206 Tape Drive has been correctly configured to the RS/6000, refer to Chapter 2, “Setting Up the 7206 Tape Drive,” in the *7206 Model 220 4mm Tape Drive Setup and Operator Guide*.

Is the 7206 Tape Drive properly configured to the RS/6000?

- NO** Go to Step 15: AIX Diagnostics.
- YES** Go to Step 15: AIX Diagnostics.

Step 15: AIX Diagnostics

This step runs the AIX diagnostics to determine the problem.

Run the diagnostics on the 7206 Tape Drive. Have the test cartridge (part number 59H4457) available for when the diagnostics prompt you to load the cartridge.

From the AIX command prompt, type:

```
diag
```

and then press Enter. For additional instructions on running diagnostics, refer to your AIX manuals.

Do all of the diagnostics routines pass?

NO Replace the FRU isolated by the diagnostics and identified by the service request number.

Note: If the drive is the FRU isolated by the diagnostics, check that the J1 connector is properly seated. If the drive has recently been replaced because of a similar problem, contact your service personnel.

YES If no problem was identified, the problem may be intermittent, related to the tape quality, or relating to the environment. If a FRU was replaced or changed and no more errors occur, the problem is fixed.

This completes the MAPs.

Chapter 4. Removal and Replacement Procedures

This chapter describes the procedures to follow when removing and replacing the field replaceable units (FRUs), such as the drive, power supply, and cooling fan for the 7206 Model 220 Tape Drive. It also describes how to manually remove a tape cartridge from the 7206 Tape Drive.

Before installing any FRU, let it acclimate to the operating environment for as long as it has been away from the environment or for 24 hours, whichever is less.

Handling Static-Sensitive Devices

Attention: Tape drives are sensitive to static electricity discharge. To prevent damage, when handling a tape drive wrap it in an antistatic bag.

Take the following precautions:

- Do not remove the drive from its antistatic bag until you are ready to install it.
- With the drive still in its antistatic bag, touch it to the metal frame of an electrically grounded surface.
- Hold the drive by the frame. Avoid touching the solder joints or pins.
- Handle the drive carefully to prevent permanent damage.

Removing and Replacing the Cover

To remove the cover from the 7206 Tape Drive:

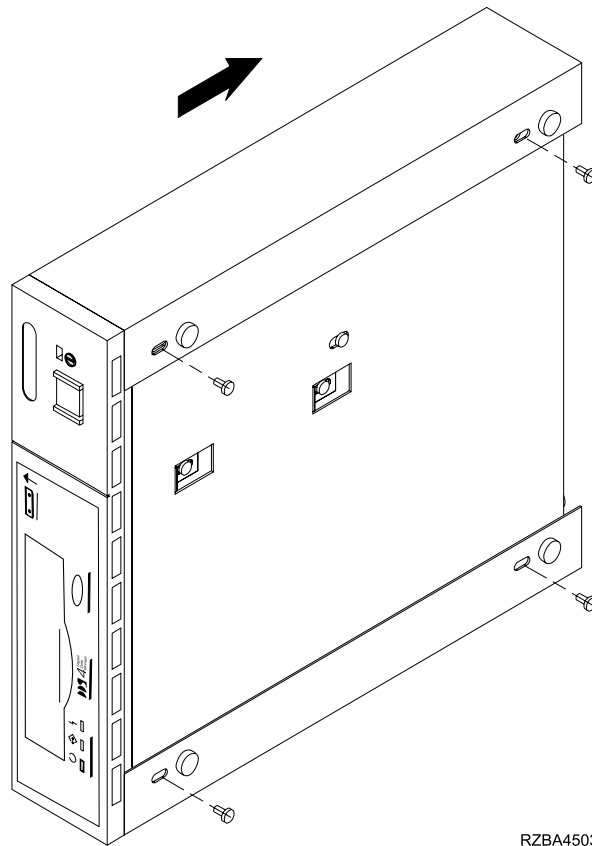
1. If a tape cartridge is in the drive, eject it.
2. Do a controlled system shutdown (refer to the instructions in Chapter 2, "Setting Up the 7206 Tape Drive," in the *7206 Model 220 4mm Tape Drive Setup and Operator Guide*).
3. If it is on, turn off the power to the 7206 Tape Drive.

DANGER

<p>To prevent a possible electrical shock when installing the device, ensure that the power cord for that device is unplugged before installing signal cables. (RSFTD204)</p>
--

4. Unplug the 7206 Tape Drive power cable from the electrical outlet.
5. Disconnect the power cable from the 7206 Tape Drive.
6. Disconnect the SCSI bus cable from the 7206 Tape Drive.
7. Tilt the 7206 Tape Drive on its side and remove the four cover mounting screws from the bottom. See Figure 10 on page 29.
8. Remove the cover by sliding it to the rear (see the directional arrow in Figure 10 on page 29).

To replace the cover, reverse the removal procedure.



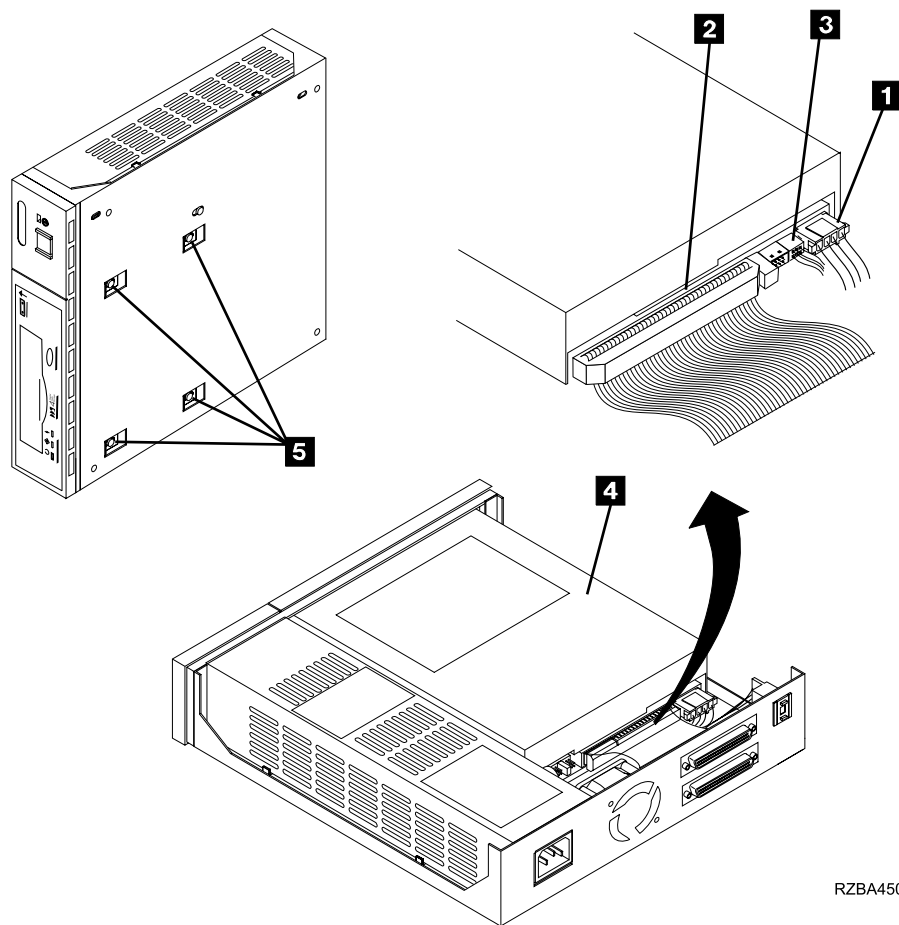
RZBA4503-0

Figure 10. Removing and Replacing the Cover. The 7206 Tape Drive is shown tilted on its side.

Removing and Replacing the Drive

To remove the drive from the 7206 Tape Drive:

1. Perform the cover removal procedure. Refer to “Removing and Replacing the Cover” on page 28.
2. Disconnect the power supply connector (J1) (**1** in Figure 11) from the drive.
3. Disconnect the SCSI bus cable **2** from the drive.
4. Disconnect the SCSI address cable **3** from the drive.
5. Tilt the 7206 Tape Drive on its side (see Figure 11). Support the drive **4** while removing the four screws **5** that secure the drive to the chassis.
6. Support the drive while returning the 7206 Tape Drive to its original position.
7. Slide the drive out the front of the chassis.



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Figure 11. Removing and Replacing the Drive

To replace the drive, reverse the removal procedure. Make sure to

- Correctly insert and engage each cable to its proper connector.
- Arrange the cables so that they do not interfere with the cooling fan blades or the replacement of the cover.

Note: The power supply connector J3 is not used in the 7206 Tape Drive.

Removing and Replacing the Power Supply

DANGER

Do not attempt to open the covers of the power supply. Power supplies are not serviceable and are to be replaced as a unit. (RSFTD217)

To remove the power supply from the 7206 Tape Drive:

1. Perform the cover removal procedure. Refer to “Removing and Replacing the Cover” on page 28.
2. Tilt the 7206 Tape Drive on its side. Support the power supply (**1** in Figure 12) while removing the power supply mounting screw **2** from the bottom.
3. Support the power supply while returning the 7206 Tape Drive to its original position.
4. Disconnect the power supply connector (J1) (**3** from the drive.
5. Disconnect the power supply connector (J2) **4** between the power supply and the cooling fan.
6. Grasp the rear of the power supply and while pressing it toward the front panel, lift the rear of the power supply from the chassis.
7. Push the power switch push button **5** out of the front panel and set it aside.

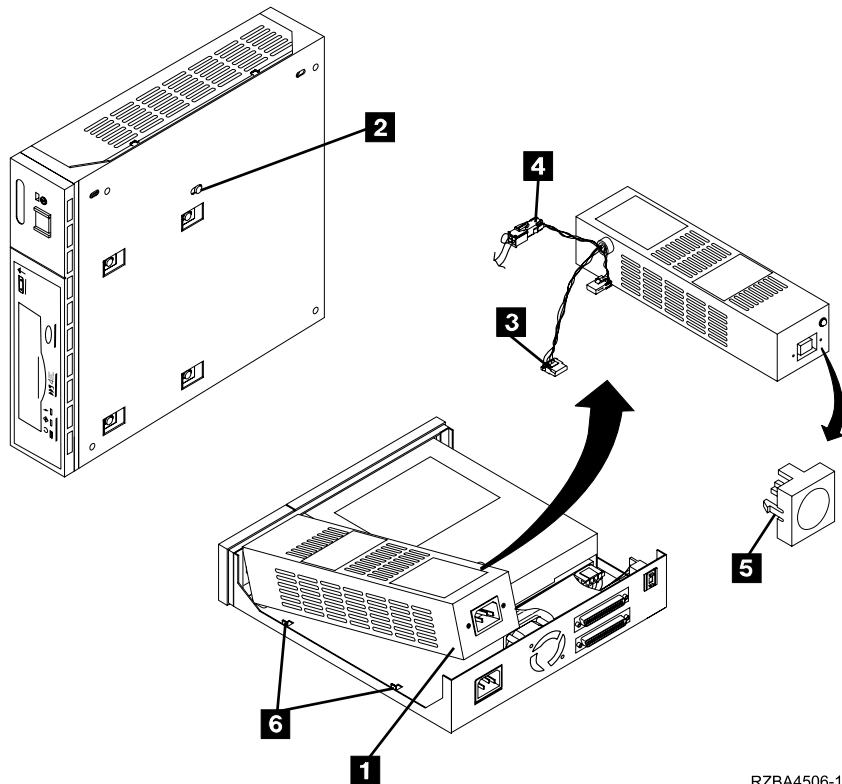


Figure 12. Removing and Replacing the Power Supply

To replace the power supply, reverse the removal procedure. Make sure to:

- Align the power supply inside the two tabs (**6** in Figure 12 on page 32) on the base of the chassis.
- With its locking features in a horizontal position, insert the power switch push button **5** into the front panel and press until it locks in place.

Note: If the power switch does not work properly, loosen the power supply mounting screw, slide the power supply to the rear of the chassis, and retighten the mounting screw.

- Arrange the cables so that they do not interfere with the cooling fan blades or the replacement of the cover. Ensure that they do not obstruct airflow through the fan.

Note: The power supply connector J3 is not used in the 7206 Tape Drive. Make sure that the J3 connector is placed in a position so it will not interfere with the operation of the drive or the fan.

Removing and Replacing the Cooling Fan

To remove the cooling fan:

1. Perform the cover removal procedure. Refer to “Removing and Replacing the Cover” on page 28.
2. Disconnect the power supply connector (J2) (**1** in Figure 13) between the power supply and the cooling fan.
3. Remove the two screws, lockwashers, and nuts **2** that secure the cooling fan to the rear of the 7206 Tape Drive.
4. Lift the cooling fan out of the 7206 Tape Drive.

To replace the cooling fan, reverse the removal procedure. Make sure that the cooling fan is oriented so that air blows out of the 7206 Tape Drive.

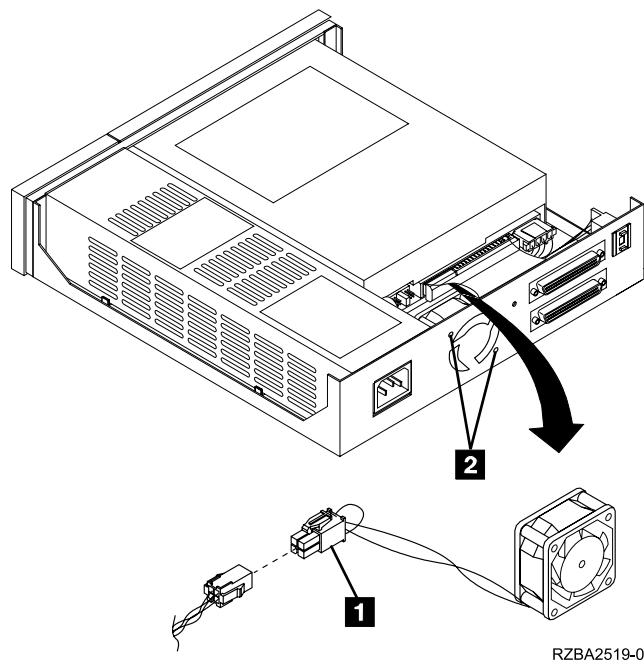


Figure 13. Removing and Replacing the Cooling Fan

Manually Removing a Tape Cartridge

Attention: The procedure for manually removing a tape cartridge could damage your tape cartridge, the 7206 Tape Drive, or both. Use this procedure only after you have:

1. Turned the power to the 7206 Tape Drive off and on again to clear potential hang conditions.
2. If available, issued the Unload SCSI command from your system command menu.
3. Disconnected the 7206 Tape Drive from the system, and turned the power to the 7206 Tape Drive on and off again several times.
4. Attempted an emergency eject of the cartridge by pressing and holding the unload button for at least five seconds (see “Emergency Eject Feature” on page 3).

The following procedure describes how to manually remove a data cartridge from the 7206 Tape Drive. If this procedure is performed, replace the drive.

1. Remove the drive from the 7206 Tape Drive (see “Removing and Replacing the Drive” on page 30).
2. Remove the mounting rails by removing the four screws (**1** in Figure 14) near the lower edge of the drive (two on each side). Access the screws through holes in the side of each rail.
3. Remove the front bezel (the bezel snaps on) by doing the following:
 - a. Use a small screwdriver to depress one of the bezel tabs **2**.
 - b. Pull the bezel down from the top.
 - c. Lift the bezel off the bottom locating tabs.
 - d. Remove the bezel from the unit.

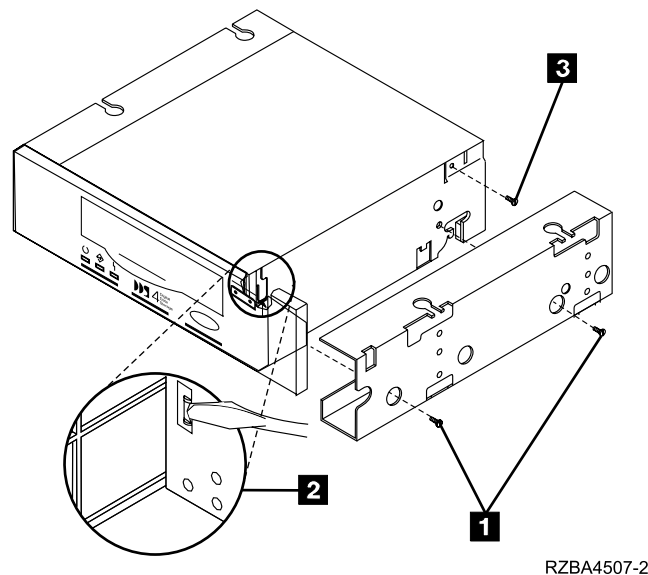


Figure 14. Removing the Mounting Rails from the Drive

4. Remove the top lid of the drive mechanism (4 screws).
5. Insert a 1.5 mm hexagonal key or a small Phillips screwdriver into the aperture on the right side of the drive looking from rear. This gives you access to the motor worm wheel, as shown in Figure 15. Turn the hexagonal key or small screwdriver counter-clockwise to release the cartridge.

Note: This may take more than 1000 turns

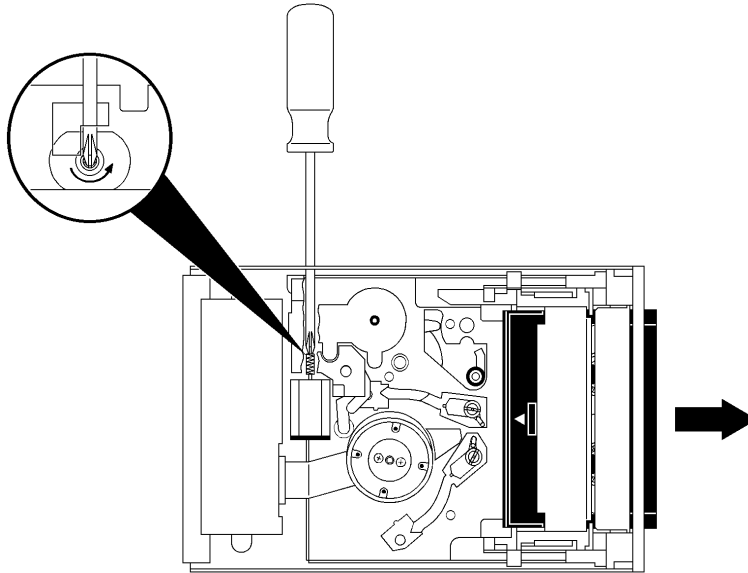


Figure 15. Turning the Motor Worm Wheel to Release the Cartridge

6. Reassemble the drive in reverse order.

Chapter 5. Parts Diagram and Parts List

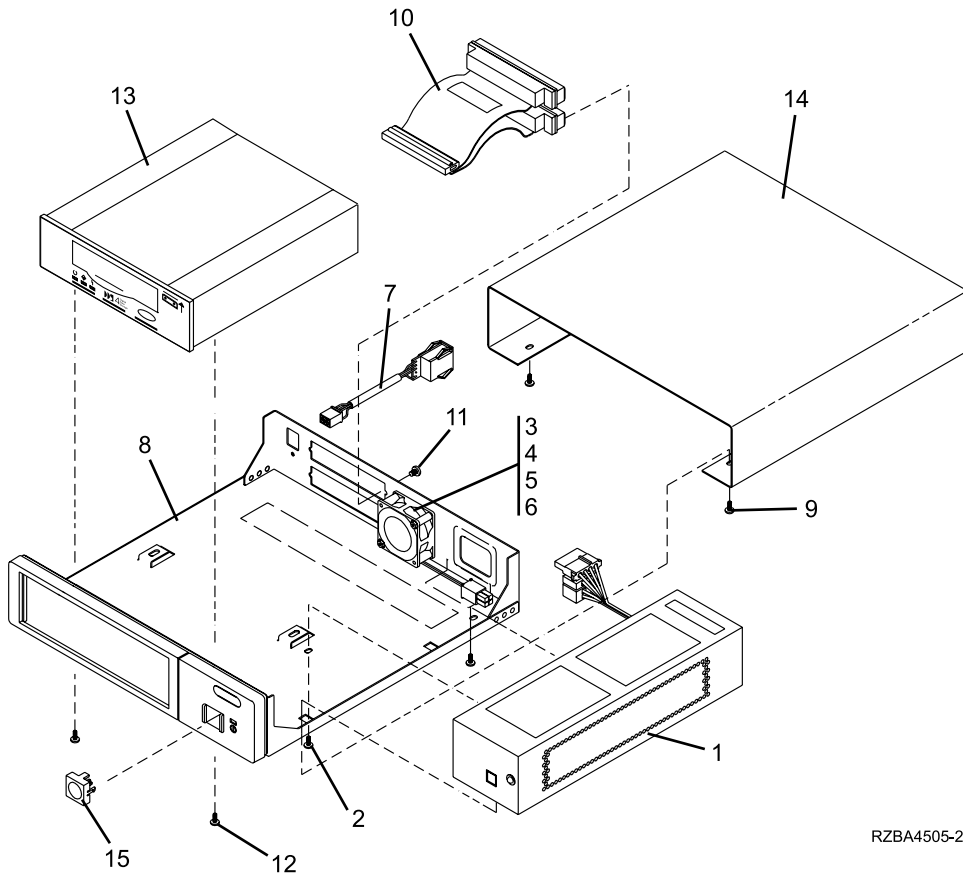
How To Use This Parts List

AR	(As Required) in the <i>Units</i> column indicates that the quantity is not the same for all machines.
NP	(Non-Procurement) in the <i>Part Number</i> column indicates that the part is non-procurable and that the individual parts or the next higher assembly should be ordered.
NR	(Not Recommended) in the <i>Units</i> column indicates that the part is procurable but not recommended for field replacement, and that the next higher assembly should be ordered.
00	(Not Shown) in the <i>Asm- Index</i> column indicates that the part is either not shown or not referenced in the illustration.
R	(Restricted) in the <i>Units</i> column indicates that the part has a restricted availability.
Indenture	The indenture is marked by a series of dots located before the parts description. The indenture indicates the relationship of a part to the next higher assembly. For example:
Indenture	Relationship of Parts
(No dot)	MAIN ASSEMBLY
(One dot)	• Detail parts of a main assembly
(One dot)	• Sub assembly of the main assembly
(Two dots)	• • Detail part of a one-dot sub assembly
(Two dots)	• • Sub assembly of a one-dot sub assembly
(Three dots)	• • • Detail part of a two-dot sub assembly

Example of Parts Listing

Asm- Index	Part Number	Units	Description
3-	2512667	1	Cover Asm, Rear, Red
	2513714	1	Cover Asm, Rear, White
			For Next Higher Asm, see Assembly 1-2.
-1	5373637	1	•Seal, Top
-2	5356429	2	•Clip, Retaining
-3	1847630	1	•Finger Stock Asm
-4	1847602	NR	••Channel, Finger Stock
-5	5373639	AR	•Seal, Bottom
-6	5356429	2	•Clip, Retaining
-7	NP	1	•Cover, Rear, Without Paint
-5	0416629	R	•Screw, Panel

Assembly 1: Parts Diagram



RZBA4505-2

Assembly 1: (continued)

Asm-Index	Part Number	Units	Description
1-1	59H3760	1	Power supply
-2	46G2677	3	Screw, power supply, M3 x 6mm
-3	42F7300	1	Cooling fan
-4	46G2676	2	Screw, cooling fan
-5	1622401	2	Nut, cooling fan
-6	1622344	2	Washer, cooling fan, optional P/N 0338169
-7	59H2694	1	Cable, SCSI address
-8	59H2689	1	Chassis
-9	46G2677	2	Screw, cover, M3 x 6mm
-10	35L1162	1	Cable, 68-pin SCSI internal
-11	0251970	4	Screw, SCSI connectors
-12	46G2677	4	Screw, drive, M3 x 6mm
-13	34L3614	1	Tape drive, 4mm
-14	59H3847	1	Cover, includes feet
-15	74G8497	1	Push button, power supply
-00	52G4291	1	Device-to-device SCSI cable, .7 meter (2 ft) 68P to 68P
-00	06H6036	1	System-to-device SCSI cable, 1 meter (3 ft) 68P to 68P
-00	52G9501	1	System-to-device SCSI cable, 1.5 meter (5 ft) CC68 to 68P
-00	52G4337	1	System-to-device SCSI cable, 1.5 meter (5 ft)
-00	76H0518	1	Interposer, .3 meter (1 ft) VHDCI 68 to 68s
-00	52G9907	1	Terminator, SE 68 pin
-00	35L0145	1	Terminator, LVD/SE 68 pin
-00	59H4458	1	Data cartridge
-00	59H4457	1	Test cartridge
-00	21F8763	1	Cleaning cartridge

Appendix A. Power Cables



To avoid electrical shock, a power cable with a grounded attachment plug has been provided. Use only properly grounded outlets.

Power cables used in the United States and Canada are listed by Underwriter's Laboratories (UL™) and certified by the Canadian Standards Association (CSA™). The power cables consist of:

- Electrical cables, type SVT or SJT.
- Attachment plugs complying with National Electrical Manufacturers Association (NEMA) 5-15P, that is:

“For 115 V operation use a UL Listed Cable Set consisting of a minimum 18 AWG, Type SVT or SJT three conductor cable a maximum of 15 feet in length and a parallel blade, grounding type attachment plug rated at 15 A, 125 V.”

“For 230 V operation in the United States use a UL Listed Cable Set consisting of a minimum 18 AWG, Type SVT or SJT three conductor cable a maximum of 15 feet in length, and a tandem blade, grounding type attachment plug rated at 15 A, 250 V.”

- Appliance couplers complying with International Electrotechnical Commission (IEC) Standard 320, Sheet C13.

Power cables used in other countries consist of:

- Electrical cables, type HD21.
- Attachment plugs approved by the appropriate testing organization for the specific countries where they are used.

“For units set at 230 V (outside of U. S.): Use a Cable Set consisting of a minimum 18 AWG cable and grounding type attachment plug rated 15 A, 250 V. The Cable Set should have the appropriate safety approvals for the country in which the equipment is to be installed and marked 'HAR'.”

Table 4 on page 42 lists the power cable part number, the country where the power cable can be used, and an index number to be matched with the receptacles shown in Figure 16 on page 43. If your power cable does not match this information, contact your local dealer.

Table 4. Power Cable Information

Part Number	Country	Index
1838574 Japan	Bahamas, Barbados, Bolivia, Brazil, Canada, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Netherlands Antilles, Panama, Peru, Philippines, Taiwan, Thailand, Tobago, Trinidad, U.S.A. (except Chicago), Venezuela	1
6952300 US/Canada	Bahamas, Barbados, Bermuda, Bolivia, Brazil, Canada, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Korea (South), Mexico, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, Puerto Rico, Saudi Arabia, Suriname, Taiwan, Trinidad, U.S.A. (except Chicago), Venezuela	2
6952301 6 ft Chicago	Chicago, U.S.A.	2
13F9940 Australia	Argentina, Australia, New Zealand, Uruguay	3
13F9979 France	Abu Dhabi, Austria, Belgium, Bulgaria, Botswana, Egypt, Finland, France, Germany, Greece, Iceland, Indonesia, Korea (South), Lebanon, Luxembourg, Macau, Netherlands, Norway, Portugal, Saudi Arabia, Spain, Sudan, Sweden, Turkey, Yugoslavia	4
13F9997 Denmark	Denmark	5
14F0015 South Africa	Bangladesh, Burma, Pakistan, South Africa, Sri Lanka	6
14F0033 United Kingdom	Bahrain, Bermuda, Brunei, Channel Islands, Cyprus, Ghana, Hong Kong, India, Iraq, Ireland, Jordan, Kenya, Kuwait, Malawi, Malaysia, Nigeria, Oman, People's Republic of China, Qatar, Sierra Leone, Singapore, Tanzania, Uganda, United Arab Emirates (Dubai), United Kingdom, Zambia	7
14F0051 Switzerland	Liechtenstein, Switzerland	8
14F0069 Italy	Chile, Ethiopia, Italy	9
14F0087 Israel	Israel	10
6952291 Colombia	Colombia, Paraguay	11

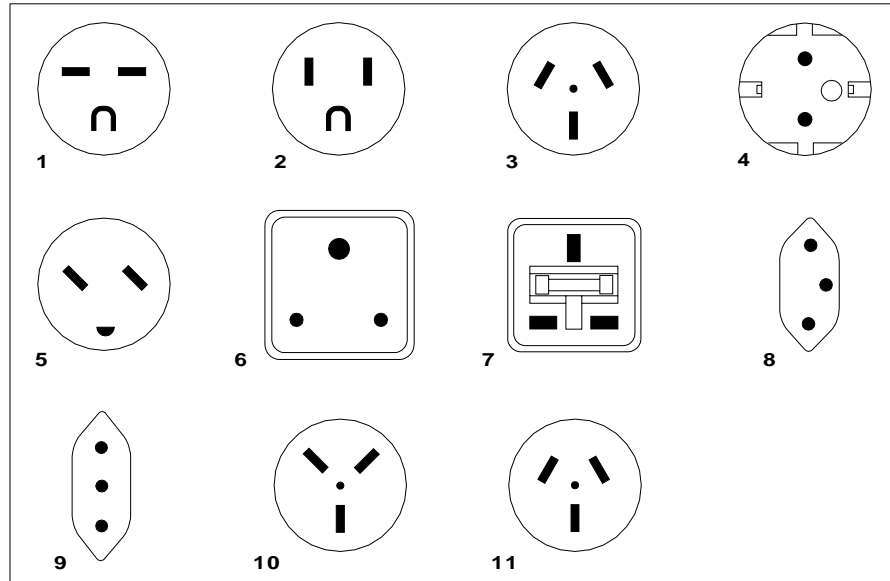


Figure 16. Types of Receptacles

Appendix B. Ordering Tape Cartridges

All tape cartridges are not alike. The tape composition and length, and the construction of the cartridge itself can all affect the quality and capacity of the recording and the performance of your tape drive. A poor quality tape cartridge may appear to work adequately in your system, yet it can leave contamination in the tape path or impede the speed of the recording.

The length and composition of the tape, and the size, shape, and construction of the cartridge shell must all be considered when selecting the tape cartridge to be used with your system. We recommend using only data and cleaning cartridges supplied by IBM. Data grade tape media is the only type of tape media that should be used for backup and data processing. Saving money by using generic media for data purposes will do little to save your business if your data is destroyed and your backup tapes fail because of inferior media.

Table 5 lists the tape cartridges that you can order for the 7206 Model 220 4mm Tape Drive. To order cartridges in the United States and Canada, call 1-888-IBM-MEDIA. To order cartridges in other locations, contact your local provider of IBM storage products.

Table 5. Tape Cartridges for the 7206 Model 220 4mm Tape Drive

IBM Part Number	Type of Cartridge	Length
59H4458	4mm Data Cartridge	150 m (492 ft)
21F8763	4mm Cleaning Cartridge	--

Appendix C. Safety Inspection Procedures

Use the following procedures to identify unsafe conditions. Be cautious of potential safety hazards not covered by the procedures. If unsafe conditions are present, determine how serious the hazards are and whether you should continue before correcting the problem.

Figure 17 shows the components to review during the service inspection.

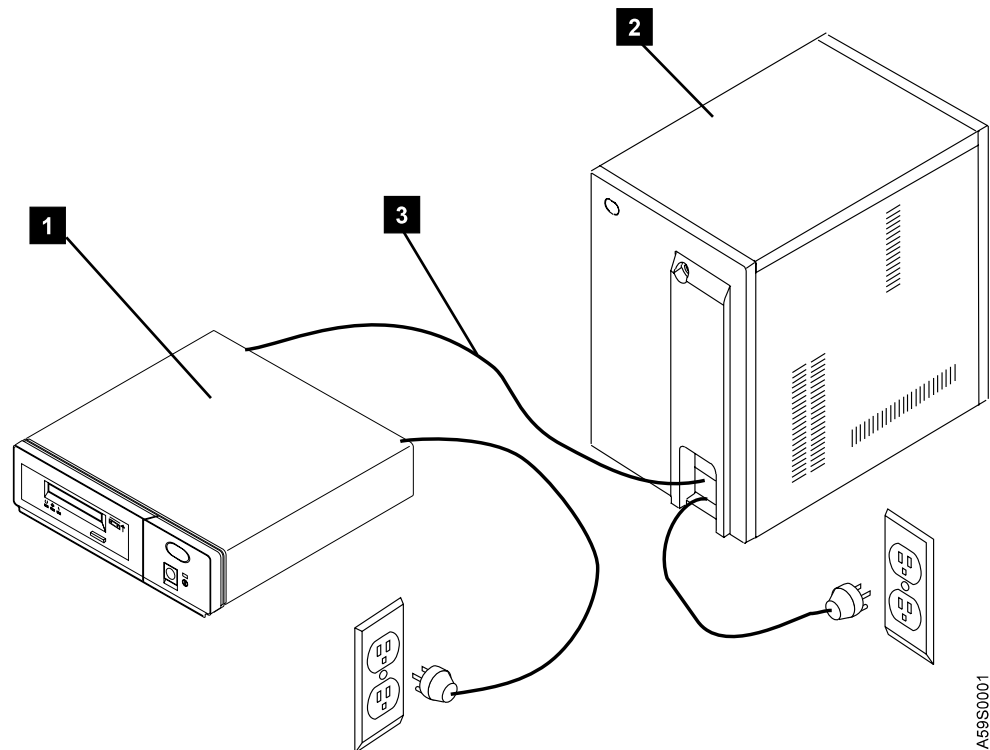


Figure 17. Safety Inspection

Perform the following safety checks.

1. Do a controlled system shutdown (refer to the instructions in Chapter 2, "Setting Up the 7206 Tape Drive," in the *7206 Model 220 4mm Tape Drive Setup and Operator Guide*).
2. Turn off the power to all external devices connected to the system unit.
3. Turn off the power to the 7206 Tape Drive (**1** in Figure 17).
4. Turn off the power to the system unit (**2**).

DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)

5. Unplug the 7206 Tape Drive external power cable from the electrical outlet.
6. Unplug the system unit power cable from the electrical outlet.
7. Check the 7206 Tape Drive external power cable for damage.

DANGER

To prevent a possible electrical shock when adding or removing any devices to or from the system, ensure that the power cords for those devices are unplugged before the signal cables are connected or disconnected. If possible, disconnect all power cords from the existing system before you add or remove a device. (RSFTD203)

DANGER

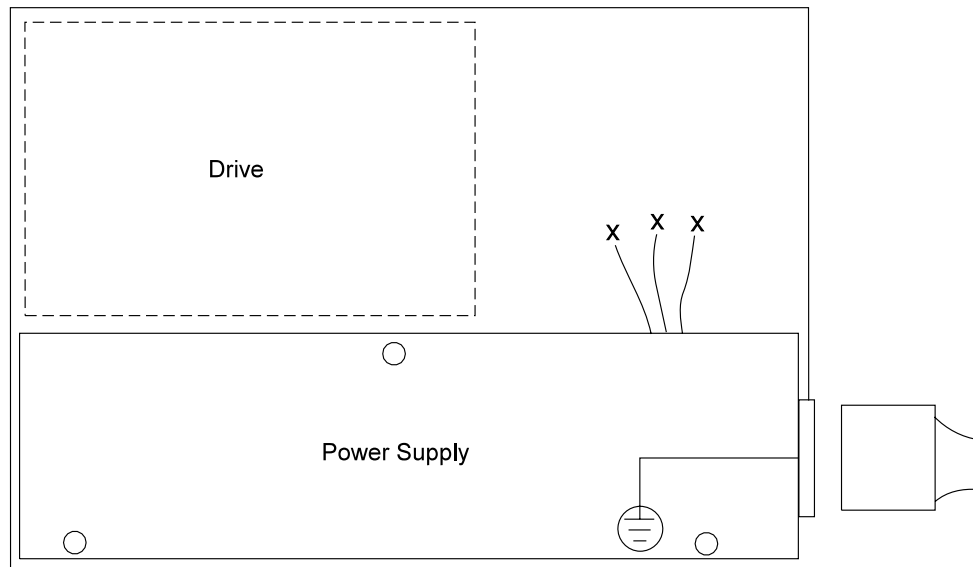
To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. (RSFTD004)


8. Check the external SCSI bus (signal) cable **3** for damage.
9. Check the SCSI bus terminator for damage.
10. Check the covers for sharp edges, damage, or alterations that expose the internal parts of the 7206 Tape Drive.
11. Check the covers for proper fit. They should be in place and secure.
12. Check the product label on the bottom of the 7206 Tape Drive to make sure it matches the voltage at your outlet.

DANGER

Dangerous voltage being measured. (RSFTD005)

13. Check the voltage level at the outlet and also check for proper grounding (see Figure 18 on page 49).



-  = Main AC ground location part of power supply
- X = Redundant ground achieved through DC common
- = Additional grounding via hardware mounting of power supply to chassis

A38M0019

Figure 18. AC Grounding Diagram (50 Hz and 60 Hz)

14. With the external power cable (**1** in Figure 19) connected to the 7206 Tape Drive, check to ensure 1.0 ohm or less resistance between the ground lug on the external power cable plug and the metal frame.

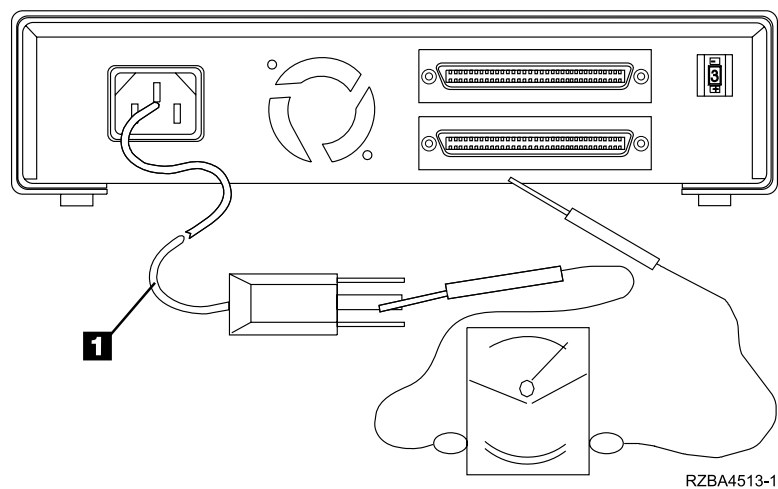
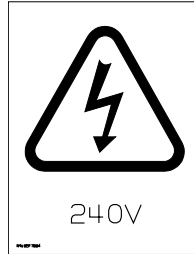


Figure 19. Safety Inspection - Rear View of the 7206 Model 220 4mm Tape Drive

Note: Use an analog meter to measure grounding resistance; do not use a digital multimeter.

15. If the 7206 Tape Drive passes the test in the previous steps, plug its external power cable into the electrical outlet. If the 7206 Tape Drive does not pass the test, see “Chapter 3. Maintenance Analysis Procedures” on page 17 for more information. If problems persist, contact your service representative.

Note: Safety Information Label, Part Number 85F7884, located on top of the power supply under the top cover, shows the following symbol:



3EM0010

This symbol indicates a hazard arising from dangerous voltage inside. Do not open.

Readers' Comments — We'd Like to Hear from You

7206 Model 220 External 4mm Tape Drive
7206 Model 220
4mm Tape Drive
Service Guide

Publication No. SY32-0409-01

Overall, how satisfied are you with the information in this book?

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Easy to understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Well organized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Applicable to your tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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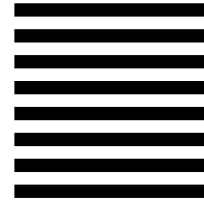
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